LISTING OF THE CLAIMS

The following list of claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A method for manufacturing an organic light-emitting diode, comprising:

providing a substrate into a chamber;

forming an anode on the substrate;

forming a hole transport layer on the anode, wherein the step of forming the hole transport layer comprises adding a reaction gas, and the reaction gas forms a plurality of impurities in the hole transport layer to trap holes;

forming an electron transport layer on the hole transport layer, and the step of forming the electron transport layer is performed without using the reaction gas; and

forming a cathode on the electron transport layer.

2. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the substrate is a transparent substrate.

3. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the material of the substrate is selected from the group consisting of glass, silicon and plastics.

4. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the anode is an indium tin oxide (ITO) transparent electrode.

5. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the anode is an indium zinc oxide (IZO) transparent electrode.

6. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the step of forming the anode is performed by using a method selected from the group consisting of a sputtering method, an evaporation method, an e-gun evaporation method, a spin-coating method and a chemical vapor deposition method.

7. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the material of the hole transport layer is an organic material having a hole transport function.

8. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the material of the hole transport layer comprises N,N'-diphenyl-N,N'-bis(3-methyl-phenyl)-1,1'biphenyl-4,4'diamine (TPD).

9. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the material of the electron transport layer is an organic material having an electron transport function.

10. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the material of the electron transport layer comprises aluminum tris-(8-hydroxyquinoline) [Alq_3].

11. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the material of the cathode is selected from the group consisting of metal and compound metal.

12. (original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the material of the cathode is aluminum.

13. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the step of forming the hole transport layer further comprises controlling an initial growth pressure of the hole transport layer between 1×10^{-8} torr and 1×10^{-3} torr.

14. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein in the step of forming the hole transport layer, further comprises controlling a pressure of the chamber between 1×10^{-7} torr and 1×10^{-2} torr when adding the reaction gas.

15. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the step of forming the hole transport layer is performed for 100 seconds to 5 minutes.

16. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the reaction gas is selected from the group consisting of N_2, NH_3, N_2O, NO and NO_2.

17. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein a flow rate of the reaction gas is between 1 sccm and 20 sccm.

18. (original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the step of forming the electron transport layer further comprises controlling a growth pressure of the electron transport layer between 1×10^{-8} torr and 1×10^{-3} torr.

19. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the step of forming the electron transport layer is performed for 100 seconds to 6 minutes.

20. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the step of forming the cathode further comprises controlling a pressure of the chamber between 1×10^{-8} torr and 1×10^{-2} torr.

21. (Original) The method for manufacturing an organic light-emitting diode according to claim 1, wherein the step of forming the cathode is performed for 1 second to 1 minute.

22. (Currently Amended) A method for manufacturing an organic light-emitting diode, comprising:

providing a substrate into a chamber, wherein an anode is formed on the substrate;

performing an evaporation step to form a hole transport layer on the anode, wherein the evaporation step comprises evaporating the material of the hole transport layer and a reaction gas to make the reaction gas form a plurality of impurities in the hole transport layer to confine holes;

forming an electron transport layer on the hole transport layer, and the step of forming the electron transport layer is performed without using the reaction gas; and

forming a cathode on the electron transport layer.

23. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein the substrate is a transparent substrate, and the material of the substrate is selected from the group consisting of glass, silicon and plastics.

24. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein the anode is selected from the group consisting of an indium tin oxide transparent electrode and an indium zinc oxide transparent electrode.

25. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein the step of forming the anode is performed by using a method selected from the group consisting of a sputtering method, an evaporation method, an e-gun evaporation method, a spin-coating method and a chemical vapor deposition method.

26. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein between the step of providing the substrate and the evaporation step, the method for manufacturing an organic light-emitting diode further comprises performing a pump step to make the chamber have an initial growth pressure of the hole transport layer.

27. (Original) The method for manufacturing an organic light-emitting diode according to claim 26, wherein the initial growth pressure is between 1×10^{-8} torr and 1×10^{-3} torr.

28. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein the material of the hole transport layer is an organic material having a hole transport function.

29. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein the material of the hole transport layer comprises henyl-N,N'-bis(3-methyl-phenyl)-1,1'biphenyl-4,4'diamine.

30. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein the material of the electron transport layer is an organic material having an electron transport function.

31. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein the material of the electron transport layer comprises aluminum tris-(8-hydroxyquinoline).

32. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein in the evaporation step, further comprises controlling a pressure of the chamber between 1×10^{-7} torr and 1×10^{-2} torr.

33. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein the evaporation step is performed for 100 seconds to 5 minutes.

34. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein the reaction gas is selected from the group consisting of N_2, NH_3, N_2O, NO and NO_2.

35. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein a flow rate of the reaction gas is between 1 sccm and 20 sccm.

36. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein the step of forming the electron transport layer further comprises controlling a growth pressure of the electron transport layer between 1×10^{-8} torr and 1×10^{-3} torr.

37. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein the step of forming the electron transport layer is performed for 100 seconds to 6 minutes.

38. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein the material of the cathode is selected from the group consisting of metal and compound metal.

39. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein the material of the cathode is aluminum.

40. (Original) The method for manufacturing an organic light-emitting diode according to claim 22, wherein the step of forming the cathode is performed for 1 second to 1 minute.